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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/963,567	09/27/2001	Tai-Her Yang	YANG3073/EM/7272	8926

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BACON & THOMAS
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EXAMINER

LE, DANG D

ART UNIT PAPER NUMBER

2834

DATE MAILED: 10/02/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/963,567

Applicant(s)

YANG, TAI-HER

Examiner

Dang D. Le

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 July 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 3,6-13,15-19,22-24,26-29 and 31-43 is/are pending in the application.
- 4a) Of the above claim(s) 3,6-13 and 15-19 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 22-24,26-29 and 31-43 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 7/20/06 have been fully considered but they are not persuasive. Regarding Korthaus et al., because the rotor is axially displaced from the stator and the motor is turned off automatically, the electric characteristic of the motor can be said to vary from on to off state. In addition, the claims do not recite that "the axial position of the rotor relative to the stator is continuously adjusted in response to reverse torque caused by interaction between the rotor, stator, and load".

Regarding Joong et al. reference, Joong clearly discloses "reverse torque" in column 8, lines 10-12. Moreover, in the art of adjustable magnetic structure, the rotor and the stator can be displaced relatively. Therefore, the stator can be said to be displaced from the rotor and vice versa. As a result, the rejection is still deemed proper and repeated hereinafter.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 22-24, 27, 29, 34-36, 39, and 43 are rejected under 35 U.S.C. 102(b) as being anticipated by Korthaus et al. (3,165,656).

Regarding claim 22, Korthaus et al. shows an electric machine, comprising:

- An electric field structure (11);
- A rotor (12) arranged to rotate relative to the electric field structure;
- A helical structure (13) situated between the rotor (12) and a rotary shaft (14), and a pre-stressed spring (26) situated at one end of the rotor (right), wherein said helical structure and said spring are arranged to enable axial displacement of the rotor relative to the shaft, and thereby vary electrical machinery characteristics of said electric machine (from on-state to off-state), in response to reverse torque resulting from interaction between said rotor (12), said electric field structure (11), and a load (the door) or driving device as the shaft rotates (shaft 14 is rotating, then braked because the door reaching its end position),
- Wherein when said reverse torque occurs, said rotor is displaced relative (Figure 2) to the shaft, thereby vary electrical machinery characteristics (to zero volt due to the opening of the switch 36).

Regarding claim 35, the claim is similar to claim 22 except that it further recites an external device for controlling the axial displacement of the rotor exteriorly. It is noted that Korthaus et al. also shows the external (because it is outside of the rotor) device (20, 21, etc.) for controlling the axial displacement of the rotor exteriorly (outside of the rotor).

Regarding claims 23, 24, 27, 29, 34, 36, 39, and 43, it is noted that Korthaus et al. shows the helical nut (13), control (switch 36).

Claim Rejections - 35 USC § 103

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4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 22, 26-28, 31-33, 37, 38, and 40-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Joong et al. in view of Krueger (6,249,069).

Regarding claim 22, Joong et al. shows all of the limitations of the claimed invention including:

- An electric field structure (11, Figure 12);
- A rotor (20B) arranged to rotate relative to the electric field structure;
- A spline structure (Figure 10) situated between the rotor and a rotary shaft (22), and a pre-stressed spring (48) situated at one end of the rotor, wherein said spline structure and said spring are arranged to enable axial displacement of the rotor relative to the shaft, and thereby vary electrical machinery characteristics of said electric machine (motor or generator), in response to reverse torque (due to direction of torque of rotor) resulting from interaction between said rotor, said electric field structure, and a load or driving device as the shaft rotates (the shaft is rotating either to generate electricity or to rotate the wheels),
- Wherein when said reverse torque occurs, said rotor is displaced relative (Figure 12) to the shaft, thereby vary electrical machinery characteristics (motor to generator or vice versa).

Joong et al. does not use helical structure.

Krueger shows that either the spline or helical structure can be used for the purpose of providing relative axial movement between the rotor and the stator.

Since Joong et al. and Krueger are all from the same field of endeavor; the purpose disclosed by one inventor would have been recognized in the pertinent art of the others.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to use helical structure as taught by Krueger for the purpose discussed above.

Regarding claim 35, the claim is similar to claim 22 except that it further recites an external device for controlling the axial displacement of the rotor exteriorly. It is noted that Joong et al. also shows the external device (46) for controlling the axial displacement of the rotor exteriorly (outside of the rotor).

Regarding claims 26-28, 31-33, 37, 38, and 40-42, it is noted that Joong et al. also show all of the limitations of the claimed invention including second spring (Figure 13), motor and generator, the varying electrical machinery characteristics of the rotor along the length and physical properties (due to the magnetic poles and gaps in Figure 15), and longer length (Figure 1).

Conclusion

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Information on How to Contact USPTO

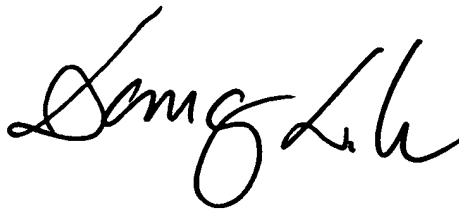
7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dang D. Le whose telephone number is (571) 272-2027. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Darren Schuberg can be reached on (571) 272-2044. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

9/26/06

A handwritten signature in black ink, appearing to read 'Dang Le', with a stylized, cursive script.

DANG LE
PRIMARY EXAMINER